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**INTERCEPT Plasma Retains a Broad Spectrum of Haemostatic
Proteins Without Activation of Thrombin or Complement**

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**Presented at the
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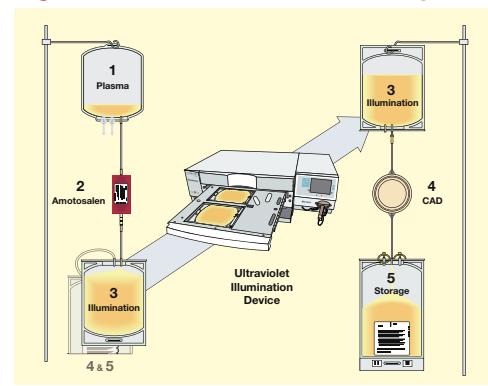
Introduction

Cerus Corporation and Baxter Healthcare Corporation have developed the INTERCEPT Plasma System (Figure 1). INTERCEPT Plasma (I-FFP) is prepared using amotosalen and UVA light to inactivate viruses, bacteria, and parasites that may contaminate plasma intended for transfusion.

The INTERCEPT Plasma System (see Figure 1)

The collected plasma (1) is sterile docked to the container set (2-5) for processing. After addition of amotosalen (2) by gravity flow, the plasma is illuminated with UVA light (3). Residual amotosalen and its photoproducts are reduced to low levels using a compound adsorption device (CAD, 4), before transfer to the storage container (5) and freezing.

Figure 1: The INTERCEPT Plasma System



Methods

Assays were performed by Cerus Corporation, Esoterix, Inc., the National Jewish Medical and Research Center, and the Blood Bank of SE Wisconsin. Clotting and chromogenic methodologies were used in addition to ELISA, turbidimetry, LIA, and SDS gel electrophoresis. Kit manufacturers included Diagnostica Stago, DadeBehring, Boehringer Mannheim, Shield Diagnostics, PharMingen, and Quidel.

Conclusion

- Extensive in vitro analysis of coagulation proteins demonstrates that INTERCEPT Plasma is functionally similar to untreated plasma

Phase 3 clinical trials demonstrated INTERCEPT Plasmato be efficacious in the treatment of acquired and congenital coagulopathies or TTP

Results (N=6)

Table 1: Retention of hemostasis-related proteins in I-FFP

Analyte	% Retention	Analyte	% Retention	Analyte	% Retention	Analyte	% Retention	Analyte	% Retention	Analyte	% Retention
Fibrinogen	77 ± 3	Factor VIII	78 ± 5	Factor XII	81 ± 8	vWf:CP	89 ± 7	α1 Antitrypsin	97 ± 1	α2 Antiplasmin	78 ± 6
Factor II	90 ± 3	Factor IX	83 ± 2	Factor XIII	92 ± 3	Antithrombin	97 ± 4	C1-esterase inh.	100 ± 6	Plasminogen	94 ± 5
Factor V	92 ± 2	Factor X	88 ± 2	vWf activity	93 ± 6	Protein C	93 ± 4	C3a	68 ± 7	HMWK	87 ± 4
Factor VII	78 ± 3	Factor XI	87 ± 2	vWf antigen	98 ± 4	Protein S	100 ± 6	C5a	94 ± 8	Prekallikrein	88 ± 9

Procoagulants, Inhibitors, Fibrinolytic Proteins

Figure 2: Coagulation Factor Activity Pre- and Post-Treatment (Mean ±SD)

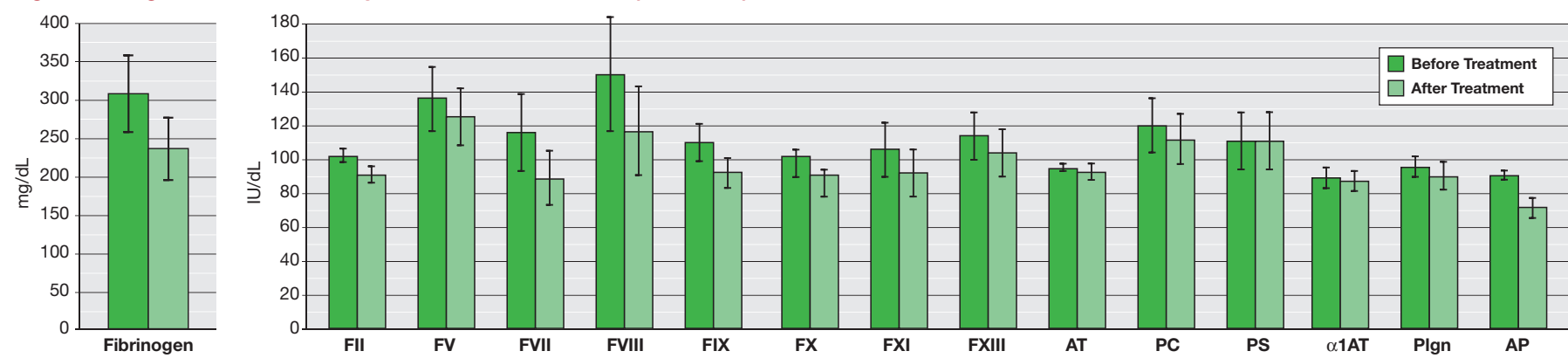


Table 2: Reference Ranges

Fibrinogen*	200 - 390 mg/dL	FXIII*	85 - 135 IU/dL
FII*	80 - 120 IU/dL	AT*	85 - 105 IU/dL
FV*	95 - 170 IU/dL	PC*	80 - 140 IU/dL
FVII*	70 - 175 IU/dL	PS*	85 - 135 IU/dL
FVIII*	85 - 235 IU/dL	α1AT**	90 - 200 mg/dL
FIX*	75 - 145 IU/dL	Plgn**	70 - 130 IU/dL
FX*	75 - 130 IU/dL	AP**	80 - 150 IU/dL
FXI*	60 - 150 IU/dL		

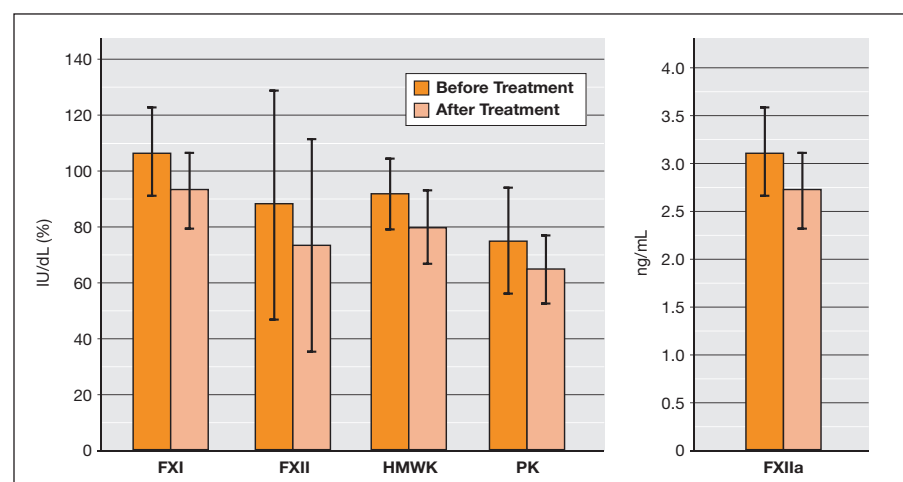
*Ranges established by Cerus using apheresis plasma.
**Ranges established by Esoterix, Inc.

Contact Pathway

Table 3:

	FXI	FXII	HMWK	PK	FXIIa
Before Treatment (Range)	87 - 131	30 - 129	73 - 109	52 - 105	0.6 - 1.4
After Treatment (Range)	78 - 114	21 - 117	64 - 99	46 - 78	0.6 - 1.4
Reference Range	60 - 150 IU/dL	50 - 150 IU/dL	65 - 135 IU/dL	65 - 135 IU/dL	0 - 3.6 ng/mL

Figure 3: Activity Before and After Treatment (Mean ±SD)



- Two plasma units were at or below the lower limit of the reference range for FXII before treatment. Two other units were below the reference range for PK prior to treatment.
- There was no evidence of autoactivation of FXII resulting from the pathogen inactivation process.

vonWillebrand Complex

Table 4:

	FVIII	vWf Activity	vWf Antigen	vWf:CP
Before Treatment (Range)	115 - 212	50 - 175	89 - 157	40 - 107
After Treatment (Range)	96 - 168	43 - 158	88 - 166	34 - 95
Reference Range (IU/dL)	85 - 235	50 - 150	50 - 150	>67%

Figure 4: Activity Before and After Treatment (Mean ±SD)

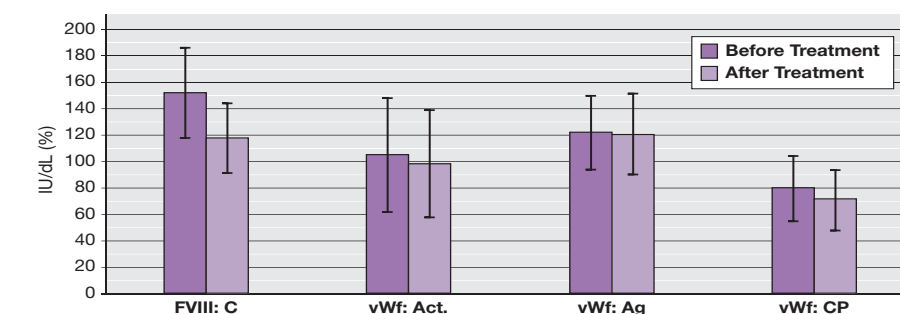
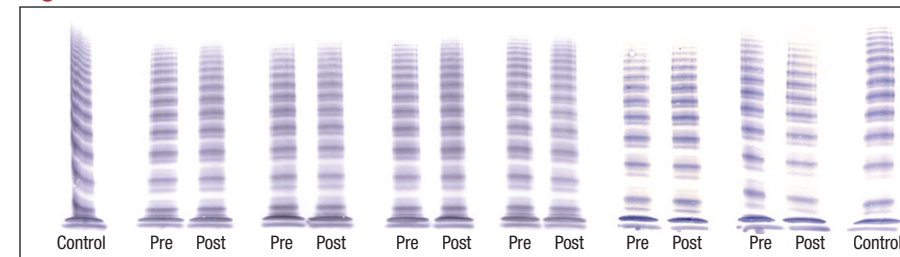


Figure 5: vWf multimers



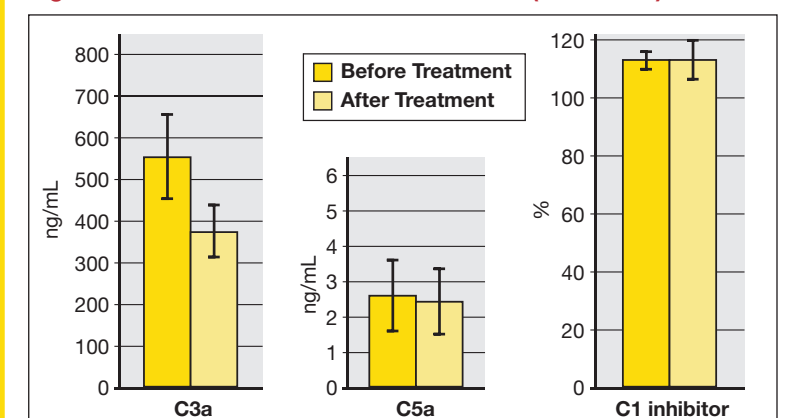
- All before and after treatment samples showed a normal pattern and distribution with a slight decrease in the largest multimeric forms when compared to normal plasma.

Complement Proteins

Table 5:

	C3a	C5a	C1 Inhibitor
Before Treatment (Range)	418 - 694	0.8 - 3.9	107 - 116
After Treatment (Range)	284 - 449	0.7 - 3.1	105 - 123
Reference Range	98 - 857 ng/mL	0 - 8.8 ng/mL	68 - 120%

Figure 6: Levels Before and After Treatment (Mean ±SD)



- Anaphylatoxins C3a and C5a were within the reference range both before and after treatment.
- No increases in C3a and C5a due to the pathogen inactivation process were observed.
- C1-esterase inhibitor activity was essentially unchanged in plasma units before and after treatment.

Markers of Activated Coagulation

Table 6: Individual Unit Data

Unit #	D-dimer (<256 ng/mL)		F 1.2 (0.4 - 1.8 nmol/L)		TAT (<5.1 ng/mL)		FVIIa (<160 U/mL)	
	Before Treatment	After Treatment	Before Treatment	After Treatment	Before Treatment	After Treatment	Before Treatment	After Treatment
1	Below limit of detection		0.4	0.5	< 2.0	6.0	43	33
2	111	< 110	0.3	0.3	Below limit of detection		49	36
3	Below limit of detection		0.3	0.3	Below limit of detection		13	< 13
4	Below limit of detection		0.6	0.6	Below limit of detection		87	71
5	179	212	0.6	0.3	2.3	2.4	70	56
6	Below limit of detection		0.2	0.2	Below limit of detection		54	37

- All before and after treatment levels were within or below the reference ranges for d-dimers, F 1.2, and FVIIa. After treatment, one of six plasma units showed a slight increase in TAT above the reference range.
- No consistent increase in the markers of activated coagulation were observed in I-FFP.

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